

Our Reference: 600204528-9

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Yaakov Almog et al.
Serial Number: 10/763,625
Filing Date: January 22, 2004
Examiner/Art Group Unit: 7724
Title: COATING SYSTEM FOR SUBSTRATES

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Yaakov Almog, hereby declare the following:

1. I am one of the inventors of the above-identified application.
2. I am a citizen of Israel residing at Nes Ziona.
3. I received a B.Sc degree in Chemistry and Physics from the Hebrew University of Jerusalem (1972), Jerusalem, Israel.
4. I received a Ph.D degree at the department of Plastic research at the Weizman Institute of Science, Rehovot, Israel. My thesis is entitled, "Dispersion Polymerization of Styrene and Methylmethacrylate," 1980.
5. I performed post doctoral research at the polymers department at the Weizman Institute of Science for four years.
6. I joined Indigo (now HP Indigo Division) in 1984 as the principal chemist and worked in the area of liquid electrophotography since then. My areas of activity include structure-functionality ration in polymers, characterization of colloidal

systems, polymers with release characteristics, transfer of ink onto substrates, surface modifications of polymers and papers, controlled modifications of UV varnishes, charging in dielectric media, and ink formulations. I am an inventor (co-inventor) on about 33 US patents and an author of a number of scientific articles in the field of polymers.

7. I reviewed the Ellery et al. (U.S. Patent No. 5,631,078) and the Lever et al. (EP 0 458 481) references and submit that both references teach the formation of a thermoplastic film or sheet. Ellery discloses a thermoplastic film formed from a combination of cellulose ester fibers and cellulose pulp. Lever discloses a polymeric film (a component of which may include a cellulose ester such as, e.g., cellulose acetate), where the film includes a polymeric substrate selected from a thermoplastic material.

8. I submit that one skilled in the art would not generally recognize thermoplastic films (of Ellery) or polymeric films (of Lever) as being interchangeable with coated or uncoated paper substrates for printing toner images thereon. This is due, at least in part, to differing chemical and physical properties of cellulose pulp (which is present in ordinary paper) and cellulose acetate (which is present in both the thermoplastic and polymeric films of Ellery and Lever, respectively). In an example, when cellulose acetate is compounded with suitable plasticizers, a relatively tough thermoplastic product is formed. Such thermoplastic products (which tend to soften when heated and harden when cooled) are useful in the manufacture of rubber and celluloid materials, as well as in photographic and cinema films. They are hard, non-absorptive, smooth substrates.

9. I further submit that, if a toner image is printed on the thermoplastic products (such as those formed in Ellery and/or in Lever), the printing characteristics of the thermoplastic film would be different from those of paper, based at least on its chemical and physical structure; for example, the absorption characteristics of the oil from the liquid ink image during the electrophotographic transfer onto the substrate,

which affects the ink durability on the substrate, is entirely different. Thus, the image would come out differently than an image printed on paper.

10. For the reasons stated above, I conclude that *neither* the Ellery nor the Lever references teach a paper-based substrate. I further conclude (also based on the reasons stated above) that one skilled in the art would not be led to use the thermoplastic film or the polymeric film of Ellery and Lever, respectively, in place of the paper substrate as recited in independent claims 38 and 43.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and, that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Y. Almog

Yaakov Almog

Sep. 24, 2018

Date